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EMS FEEDBACK

This guidance manual represents the fourth environmental management system (EMS) module developed by the Pollution Prevention Unit, Technical Support Section of the Waste Programs Division, Arizona Department of Environmental Quality. It is one of the four EMS modules developed by the department. The manual is intended for use as a voluntary guidance document for small to medium size facilities wanting to establish an EMS. Questions and comments on the EMS modules can be directed to 602-771-4205 or js3@azdeq.gov.

Disclaimer

While this manual is written to provide assistance to individuals preparing an EMS as part of the Pollution Prevention Plan amendment, it does not replace the Arizona Revised Statutes, Title 49, Chapter 5, Articles 4 and 5. Those who prepare documents read the appropriate regulations before using this guidance.

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EMS MODULE SERIES

- Module One - Launching an EMS
- Module Two - Developing an EMS
- Module Three - EMS Implementation
- Module Four - EMS Feedback

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I. Introduction

Module One of the ADEQ's Environmental Management System (EMS) template helps you initiate an EMS for your facility. Module Two guides you in setting up a simple EMS, including identifying your facility's environmental aspects and their significant impacts on the environment. In Module Three, we identify the operations associated with the environmental aspects which have significant impacts and discuss the way to control those aspects from negatively impacting the environment. This Module Four, the last module of the EMS template series, focuses on EMS feedback.

EMS as a system can be visualized in terms of "input → process → output" connection. Within this concept, a feedback is defined as a flow of information from the "output" of a system which is returned to its "input". The flow is used to transmit evaluative information about the "process" within the system. Essentially, EMS feedback represents a mechanism for conveying information about how a facility is doing in implementing its EMS. It provides the facility management with information on the facility's conformity status with the EMS requirements, whether discrepancies, exceptions or nonconformity issues are found. The feedback also provides the facility with information on areas of improvement it needs to pursue. One of the mechanisms to conduct an EMS feedback is through an audit.

II. Planning an EMS Audit: Audit Program and Audit Plan

An audit is a systematic and documented process for obtaining evidence. Many large corporations have specific programs for conducting an audit about business operations. These audit programs include activities necessary for planning and organizing audits, resources needed to conduct audits, frequency and types of audits (e.g. quality audit, environmental audit, compliance audit, or joint audit). Based on this audit program, an EMS audit plan is written.

Unlike big businesses, a small or medium size company may not have formal audit program. This small business enterprise may simply rely on an EMS audit plan for its audit.

The term "systematic" in the definition of audit implies that the audit process is conducted based on an audit plan. The EMS audit plan specifies the scope or the extent and boundaries of an EMS audit. The audit scope defines the physical locations, organizational units, activities and processes to be audited, and the time period covered by the audit. EMS audits can be conducted by hiring a contractor as a third party auditor or through in-house staff. Typically, an internal audit is conducted annually, while the third party audit every three years.

The term "evidence" in the definition of audit refers to records, statements of fact or other verifiable information relevant to the audit criteria. The audit criteria may include policies, procedures, standards, laws and regulations, management system requirements, contractual requirements, or business codes of conduct. The audit criteria are specified in the audit plan.

One basic requirement of all audits is that an audit must be independent. Independence refers to being free from bias and conflict of interest. A facility operations manager, finance manager, quality manager, or other functional managers who are free from responsibility for the activity being audited can be designated as members of the EMS audit team. The roles and responsibilities of the audit team members must be specified in the audit plan.

The audit plan defines the objectives of an audit. It needs to specify what is to be accomplished by the audit. Primarily, **the audit’s goal is to evaluate the extent of conformity of the facility’s EMS with audit criteria**, as well as the potential improvement of the EMS. The plan should ensure that all EMS elements are covered in the evaluation.

The audit plan should be reviewed, and revised as necessary. Typically the audit plan is reviewed annually, or upon the change in regulatory requirements or process changes. If you conduct audits annually, a good time to review the audit plan would be after completing the audit – as a final task of the audit team. This way, ideas for improving the audit plan will be fresh in the minds of the experienced audit team.

An EMS audit plan defines the process for scheduling, conducting, and reporting of EMS audits. It specifies on what areas will be audited, when, and by whom. A matrix displayed below illustrates a simple audit schedule.

**Audit Schedule
XYZ Corporation**

Department to be Audited	Operation to be Audited	Lead Auditor	Audit Team Members	Scheduled Date	Note

Appointment of an audit team with a designated lead auditor and audit team members must satisfy the “independence” criterion described previously. They also have to be competent and have appropriate audit training. A lead auditor is appointed when the team consists of more than one auditor. The appointment of audit team comes with the clarification of the roles and responsibilities of each team members.

The audit dates are scheduled in such a way to ensure that all EMS elements and related operations are audited at least once a year. The audited operations should be notified at

reasonable time prior to the audit. The lead auditor is responsible for the timely completion of the audit cycle (the audit, audit report, and any feedback to the audited operations). The following corrective actions are then a responsibility of the department to be audited.

The objective of an EMS audit is to evaluate the extent of conformity of the facility's EMS with audit criteria. If the audit objective to a particular department is also to check for corrective actions for nonconformance from previous audits, this should be stated, and the statement can be written in the "Note" column of the above matrix. Other items which may be placed in the "Note" column may include logistic arrangement, matters related to confidentiality or audit follow-up actions.

Auditors have to be adequately prepared for the audit by equipping them with policies, procedures, standards, regulatory requirements, prior audit reports, and other pertinent information. A pre-audit meeting with the operation supervisor is to be held to review the plan, discussed what will be covered in the audit, and modify as necessary.

III. Developing an Audit Procedure

In conducting a site audit, auditors will use the company's standardized guidance to assist them. The guidance is in the form of an audit procedure. The content of an audit procedure is firstly, to clarify that the goal of the audit is to evaluate the implementation and maintenance of the company's EMS. It attempts to find out whether the company is in conformance with the EMS requirements. If nonconformance occurs, corrective and preventive action should be identified.

The site audit procedure also provides guidance on what information will be gathered. The information gathered, or the audit evidence, can be use to determine whether EMS objectives and targets are being met, and whether the system is efficient.

All audit information needs to be documented. The audit procedure specifies how results are recorded, reported, and communicated. A sample of a simple EMS audit procedure is provided in the following section.

Procedure No.	EMS-VIII
Issue Date	April 1, 2007
Rev	0
Title	Protocol for EMS Site Audit
Approved by	

1. Purpose

The purpose of this protocol is to establish and maintain an EMS Auditing Protocol for XYZ Corporation. The protocol defines the process for conducting, recording, and reporting of in-house EMS audits.

2. Scope

This protocol contains provisions to conduct an EMS audits to ensure that the EMS is properly implemented and maintained by evaluating system efficiency, reviewing environmental policy, evaluating objectives and targets, assessing whether documented EMS procedures are being followed, identifying nonconformance with EMS requirements, and whether relevant corrective actions in the system are taken whenever necessary.

3. Procedure

3.1. The EMS audit is to cover the following elements:

1. Environmental policy
2. Environmental program development – environmental aspects, objectives, and targets.
3. Operational control – operational procedures and work instructions.
4. Employee training and tracking.
5. Internal and external communication.
6. Emergency preparedness and response.
7. Records and recordkeeping.
8. EMS audits.

3.2. EMS Audit Sheet is used to conduct the audit.

3.3. Before conducting the audit, a pre-audit conference is scheduled with the operation supervisor, or appropriate personnel, to review the plan for the audit.

3.4. Once the audit is done, the completed EMS Audit Sheet is used as the draft EMS audit report.

3.5. Any discrepancies, exceptions or noncompliance identified in the audit are to be summarized in the EMS Audit Sheet, as well as areas of improvement that needs to be pursued in regard to environmental management.

3.6. A post-audit meeting among members of the audit, including the operation supervisor, or appropriate personnel, is conducted to discuss findings, conclusions and recommendations of the draft EMS audit report. Once a consensus on the draft has been reached, the report is finalized as the EMS Audit Report.

3.7. The EMS Audit Report, in the form of the completed EMS Audit Sheet, is communicated to management for review.

4. Updates and Reviews

This audit protocol will be reviewed and updated annually, or as necessary because of process changes or changes in the regulatory requirements.

5. Responsibilities

The updates of this EMS audit protocol must be approved by the EMS manager.

6. Documentation

The audit reports and any documentation resulting from the audit will be kept in the EMS file.

7. References

The EMS Audit Sheet is provided as reference.

IV. Performing an EMS Audit

To conduct an audit, the auditors must obtain copies of all documented procedures, training records, or other materials relevant to the audit. They will review documentation for the audited area, examine past audits, and the company’s EMS Audit Sheet for performing the audit.

The following section provides a sample of an EMS Audit Sheet. The guidance may require modifications in order to meet the needs of your facility-specific audit objectives. This simple guidance covers eight EMS elements:

1. Environmental policy
2. Environmental program development: aspects, objectives, and targets
3. Operational control: procedures and work instructions
4. Employee training and tracking
5. Internal and external communication
6. Emergency preparedness and response
7. Records and recordkeeping
8. EMS audits

EMS Audit Sheet - XYZ Corporation

Use this sheet and answer the following questions regarding the eight EMS elements at the audited facility. If any of the answer is “No”, a conformance to the requirements of an EMS exists.

1. Environmental Policy

The purpose of auditing this EMS element is to ensure that policy is up-to-date and still appropriate to the nature and scale of current processes, products, and services. It is also used to verify that the policy is communicated to employee and available to the public.

No	Questions	Yes	No	Notes
1	Has an environmental policy been developed and approved by an appropriate official?			
2	Does the policy contain ALL of the following? a. Compliance with applicable environmental laws and regulations. b. Promotion of pollution prevention. c. Commitment to continual improvement.			

3	Is the policy still appropriate to the nature and scale of current processes, products, and services?			
4	Does the new employee training cover the environmental policy?			
5	Are existing employees aware of the policy's existence and its general content?			
6	Is there a mechanism in place for the policy to be made available to the public?			

2. Environmental Program Development

The auditing purpose here is to ensure that the objectives and targets reflect the facility's commitment to regulatory compliance, pollution prevention, and continual improvement. This form is used to verify that the targets are specific, measurable, and with deadlines. It is also used to verify that the program is evaluated on a periodic basis and results are communicated to top management.

No	Questions	Yes	No	Notes
1	Has an EMS procedure been developed to identify aspects, impacts, objectives and targets?			
2	Is the procedure reviewed and updated on a periodic basis, or when changes occur in facility operations (chemical use, process changes, production level, etc)?			
3	Have the aspects of a facility's processes, products, and services that have significant impacts been identified?			
4	Have objectives and targets been identified for the processes, products, and services of significant impact?			
5	Are the objectives and targets consistent with the facility's environmental policy?			
6	Does each objective have specific and measurable targets, and the methods to achieve targets with assigned deadlines and designation of responsibility for achievement?			
7	Is progress being measured toward achieving the objectives and targets?			
8	Is progress being measured on a periodic basis?			
9	Have corrective actions been initiated for areas not meeting objectives and targets?			
10	Have the results been reported to top management?			

3. Operational Control

The audit on environmental control attempts to ensure that the written operational procedures and work instructions represent current practice, and that all operations associated with the significant environmental aspects are addressed in the procedures and work instructions.

No	Questions	Yes	No	Notes
1	Have procedures and work instructions been written for all operations of significant aspect?			
2	Do the procedures and work instructions monitor the operations?			
3	Do the procedures and work instructions ensure that the operations remain within acceptable parameters?			
4	Do the procedures and work instructions include provisions to implement prompt correction if a deviation occurs?			
5	Do the procedures and work instructions mandate a review of records and reports associated with the operations?			

4. Employee Training and Tracking

The purpose of auditing this element is to ensure that the training has taken place, and the employees have been trained properly, Verify that training documentation has been developed and maintained, and has been kept current with respect to any hiring, departures, reorganizations, or new requirements.

No	Questions	Yes	No	Notes
1	Have procedures been developed to identify and track the environmental training needs of all personnel who have responsibility for processes that have significant environmental impact?			
2	Do the training and tracking procedures contain provisions to identify the type and frequency of training?			
3	Do the procedures identify who needs training?			
4	Do the procedures contain mechanism to track training of employees?			
5	Do the procedures contain provisions for review and update of training requirements?			
6	Do the procedures include appropriate training required by legal training requirements? (Such as: RCRA, SPCC, SWPPP, OSHA, etc.)			
7	Do the training and tracking procedures include provisions to require employee training on EMS procedures?			

8	Do the procedures contain provisions to require training for new employees that informs them about the facility's environmental policy and about new employees' duties within the EMS?			
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5. Internal and External Communication

The audit on communication aims at ensuring that the communication procedures are followed. Make sure that documentation of the receipt and responses to inquiries is maintained. Find out how these inquiries are documented and referred to appropriate personnel. Review the communication programs and verify that they are being implemented. Evaluate the effectiveness of the programs.

No	Question	Yes	No	Notes
1	Have communication procedures of the EMS been developed and implemented?			
2	Do the procedures identify the method and type of communication?			
3	Do the procedures identify the initiator and recipient of the communication?			
4	Do the procedures mandate the documentation of the receipt and responses to inquiries?			
5	Do the procedures contain a provision for referral of inquiries?			
6	Do the procedures provide for review and updating for communication efficiency?			
7	Do the procedures include a requirement that any change to the EMS or any of its facets be communicated to the appropriate personnel?			
8	Does the documentation system show that communication is being carried out according to the procedures?			

6. Emergency Preparedness and Response

The goal of this audit is to determine that the current emergency response plan(s), emergency identification, prevention, and mitigation programs, including any drills or equipment maintenance programs have been implemented and maintained. The review should include the regulatory-based and facility specific programs. Verify if facility changes have been reviewed for their effect on these programs. Find out if emergency response procedures are available and if personnel understand and are trained in their roles.

No	Question	Yes	No	Notes
1	Have procedures (and/or an emergency response plan) been developed to respond to and report accidents, spills, malfunctions, process upsets, and other emergency situations?			
2	Do the procedures provide for notification and reporting of accidents, spills, fires, or emergency situations?			
3	Do the procedures contain a provision to mitigate or clean-up related environmental impacts?			
4	Do the procedures provide for investigation of causes of accident and evaluation of effectiveness of response?			
5	Are regulatory requirements for the facility included in the procedures?			
6	Have arrangements been made with the local emergency responders?			
7	Have emergency response drills been conducted pursuant to the procedures?			
8	Have emergency responders been adequately trained for emergency response actions?			
9	Are emergency response instructions available in designated locations?			
10	Is emergency response equipment maintained and employees trained on location and use?			
11	Do the procedures contain a provision for a review and update to accommodate facility changes?			
12	Does the documentation system indicate that all procedures for preparedness and response are implemented pursuant to the procedures?			

7. Records and Recordkeeping

The audit should determine that the procedures for records and recordkeeping are appropriately developed, maintained, implemented and followed. Ensure that they are available and updated to accommodate facility changes. Verify that the record retention procedure is maintained and followed.

No	Question	Yes	No	Notes
1	Has a procedure for tracking records been developed?			
2	Have the types of records to be kept been identified?			
3	Has a system for record identification and indexing the records been developed?			
4	Is there a procedure to remove obsolete records and record destruction?			

5	Has a procedure for establishing reporting and recordkeeping been developed to document the environmental status of all activities?			
6	Are there provisions to update the procedures to accommodate facility changes?			
7	Does the documentation show that reporting and recordkeeping has been implemented according to the procedures?			

8. EMS Audits

The audit on the EMS element is to ensure that the EMS audit program is conducted according to the procedure, the audits are performed based on the established schedule, and any nonconformance is referred to the corrective action system. Verify that the results of the EMS audits are communicated to management.

No	Question	Yes	No	Notes
1	Are procedures in place to perform an EMS audit for the facility?			
2	Do the procedures explain the objective of the audit?			
3	Do the procedures contain the audit schedule?			
4	Do the procedures include a provision of methods of reporting audit results?			
5	Does the documentation system indicate that procedures for the EMS audit are implemented pursuant to the procedures?			
6	Does the documentation system show that nonconformance issues are identified and referred to corrective action system?			
7	Does the documentation system verify that nonconformance issues are promptly corrected?			
8	Does the documentation system show that the audit results are communicated to management?			

AUDIT SUMMARY

1. Nonconformance issues observed during this audit:

-
-
-
-
-

2. Areas where nonconformance may exist, but need further information for confirmation:

-
-
-
-
-

3. Areas of improvement that needs to be pursued in regard to conformance with EMS requirements:

-
-
-
-
-

Signature of Auditor: _____

Date: _____

V. Corrective Action

Once the audit is completed, the findings will indicate whether the audit evidence conforms or does not conform to the audit criteria. The audit also provides recommendations for areas of improvement. Management will review the audit conclusions and provide decisions and actions related to possible changes to environmental policy, objectives, targets, and other elements of the EMS consistent with the commitment to continual improvement.

Non conformance can occur due to violations of any legal requirements, process upsets in a significant operation, or violations of EMS procedure (examples are: work instructions, calibration, or record keeping requirements are not followed). This means that non conformance can be detected through an EMS audit, but it can also be detected by employees that discover a deviation from their daily activities.

When nonconformance exists, the facility needs to identify the cause of the nonconformance and evaluate the necessary corrective action. The corrective action chosen should match the magnitude of problems and be appropriate to the environmental impact encountered. The supervisor who supervises operations in the area of nonconformance and the EMS Manager should monitor the corrective action.

The corrective action may involve modifying existing control mechanisms in order to avoid repetition of the nonconformance. Any changes in the written procedures resulting from the corrective and preventive action must be recorded.

To address nonconformance, the facility should have in place a procedure which defines responsibility and authority for:

1. handling and investigating nonconformance,
2. taking action to mitigate any impacts caused by nonconformance, and
3. initiating and implementing corrective and preventive action.

A sample of a simple nonconformance procedure is provided in the following section.

Procedure No.	EMS-IX
Issue Date	April 1, 2007
Rev	0
Title	Protocol for Investigating and Correcting Nonconformance

1. Purpose

The purpose of this protocol is to define authority, responsibility, and methods for investigating and correcting nonconformance with EMS requirements.

2. Scope

This protocol contains provisions to initiate and complete corrective action and to review corrective actions for effectiveness.

3. Procedure

3.1. Employees that discover a deviation from operations and activities or a violation of regulatory requirements are to immediately notify their supervisor.

3.2. The supervisor will initiate corrective action by identifying the problem, evaluating potential corrections, deciding on the corrective action including an implementation timeline and assignment of tasks, and take the corrective action. The supervisor will record these activities in the EMS Corrective Action Form.

3.3. When the corrective action is completed, the supervisor will complete the EMS Corrective Action Form, date it and submit the form to the EMS Manager.

3.4. The EMS Manager will review the corrective action form for effectiveness. If necessary, changes in procedures will be made to prevent reoccurrence of the nonconformance.

3.5. All corrective actions are to be logged on the EMS Corrective Action Log.

4. Updates and Reviews

This protocol and methods used for corrective actions will be reviewed annually, or upon changes in regulatory requirements and operational changes.

5. Responsibilities

5.1. Employees are responsible for bringing to their supervisor's attention any areas of nonconformance they discover.

5.2. The supervisor or the EMS Manager can initiate and log a corrective action.

6. Documentation

The corrective action documentation will be kept in the EMS file.

7. Reference

The EMS Corrective Action Form and the EMS Corrective Action Log are provided as references.

**EMS Corrective Action Form
XYZ Corporation**

Request No

Action Requested by: Area of Nonconformance:	Date:
Statement of Problem:	
Problem Analysis:	
Corrective Action Taken:	Date:
Changes Identified as Result of Corrective Action:	
Review of Effectiveness:	

Signature of Supervisor:

Date:

VI. Summary

EMS feedback is a mechanism for conveying information about how a facility is doing in implementing its EMS. It is about its conformity with EMS requirements. When nonconformance exists, a facility needs to know the causes of nonconformance and the appropriate action to correct nonconformance. One of the mechanisms to gain feedback is through an EMS audit.

This module described steps necessary for planning an EMS audit, developing an audit procedure, and performing an EMS audit. When conducting an audit, the audit team may observe nonconformance issues and areas where nonconformance may exist but needs further information for confirmation. As part of the audit, the audit team will also recommend areas that need to be improved in order to conform to EMS requirements.

When nonconformance exists, corrective action needs to be conducted. This module described the procedure for investigating and correcting nonconformance. The procedure contains provisions to initiate and complete corrective action and to review corrective actions for effectiveness.

EMS feedback represents an important part of the EMS cycle. Through EMS feedback, management will be able to provide sound decisions and actions related to possible changes to environmental policy, objectives, targets, and other elements of the EMS consistent with the commitment to continual improvement.